

REMARKS

Claims 1-3, 6-7, 9 and 11 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over US 6,617,409 to Yukawa et al. in view of US 4,931,505 to Miyazaki et al. Claim 4 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over the combined teaching of Yukawa and Miyazaki and further in view of US 6,489,396B2 to Nakamura et al. Claim 5 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over the combined teaching of Yukawa and Miyazaki and further in view of US 5,216,081 to Mohri et al. Also, claims 8 and 10 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over the combined teaching of Yukawa and Miyazaki, and further in view of US 1,941,398 to Iliff et al. These rejections are respectfully traversed.

The present invention is directed to a flake pigment provided with a coating made of a resin composition containing a copolymer comprising a bond unit from a fluoric polymerizable monomer having alkyl fluoride groups and a bond unit arriving from a polymerizable monomer having phosphate groups. The flake pigment is used in paint for providing the paint with high brightness. Thus, the flake pigment of the present invention is useable in a powder paint for supplying a film with excellent metallic properties, high brightness and excellent secondary adhesiveness.

As recited in the claims of the present application, the flake particles are provided with a single-layer or double-layer coat which covers the surface of the flake particles wherein at least one layer of said single-layer or double-layer coat is made of a resin composition containing a copolymer comprising a bond unit arising from a fluoric polymerizable monomer having alkyl fluoride groups and a bond unit arising from a polymerizable monomer having phosphate groups, said copolymer being soluble in a solvent due to its molecular structure and wherein all of the alkyl fluoride groups and all of the phosphate groups are present in separate side chains of the copolymer. Thus, since all of the alkyl fluoride groups and all of the phosphate groups are contained in different bond units, respectively, they are present in independent respective side chains in the copolymer.

The Examiner, recognizing that all of the previous prior art relied upon did not recognize that all of the alkyl fluoride groups and all of the phosphate groups are present in independent respective side chains of the copolymer, has further relied upon the Miyazaki patent, the Examiner stating that the copolymer disclosed therein is water soluble and that the fluorine and phosphoric groups are in separate side chains. It is the Applicants' position that the copolymer as disclosed in the Miyazaki patent is fundamentally different from that of the present invention.

In Col. 6, line 67 to Col. 7, line 5, the Miyazaki reference discloses the function of its copolymer (B). Thus, the Miyazaki reference states that it is considered that when the coating layer is in a dried state, it presents a water repellant surface by virtue of the polyfluorocarbon chain, but when exposed with a large amount of water, the polyfluorocarbon chain withdraws from the surface and the hydrophilic groups transfer to the surface, whereby the surface becomes hydrophilic. Therefore, in the copolymer (B) of the Miyazaki reference, as the "hydrophilic group" or the "polyfluorocarbon chain" reversibly transfers to or withdraws from the surface of the coating layer, in accordance with the environment, it appears that the copolymer (B) of the Miyazaki reference is present in such a state that it is not absorbed to other substances. In contrast, as the specific resin of the Yukawa reference is characterized by excellent adsorption property to the surface of the metallic pigment, there would be no motivation to replace the resin of the Yukawa reference with the copolymer (B) of the Miyazaki reference. Rather, in consideration of the fact that the copolymer (B) of the Miyazaki reference is not adsorbed into other substances, replacement of the resin of the Yukawa reference with the copolymer (B) of the Miyazaki reference would clearly be discouraged. Accordingly, since it would be undesirable to combine the teachings of the Miyazaki reference with that of the Yukawa reference, it is believed that the present invention would not be obvious by combining the teachings of the respective references as suggested by the Examiner.

In the Examiner's Office Action under the heading "Response to Arguments," the Examiner attempts to rebut the Applicants' position with respect to the teachings of the Miyazaki reference, the Examiner arguing that the Miyazaki reference discloses the property of their invention after the coating is formed on the substrate. However, it is the Applicants' position that such an argument adopted by the Examiner would not appear to rebut the Applicants'

position on this matter. Thus, initially it appears that the Examiner's statement that "Miyazaki disclose the above property of their invention after the coating is formed on a substrate," is, in effect, advantageous to the Applicants because the Examiner is admitting that the copolymer (B) of the Miyazaki reference exhibits such a property as not adsorbing two substances. In any event, the Examiner's position that the Miyazaki reference discloses the above property of their invention after the coating is formed on a substrate, is generally unreasonable, because the property of the copolymer (B) contained in the coating composition of the Miyazaki reference does not appear to change, between before the application of the coating composition to a substrate and after the application of the coating composition to a substrate. In other words, such a property of the copolymer (B) as not adsorbing to a substance, which is an important issue in the examination of the present application, is a property specific to the copolymer (B) possessed prior to application of the coating composition to a substance, that is, prior to formation of the coating on the substrate, and is not a property resulting from the application of the coating composition to the substrate. Therefore, a person skilled in the art would not find it obvious to replace the copolymer resin of Yukawa (Col, 1, lines 57-58) used for adsorption to the surface of a metallic pigment with the copolymer (B) of Miyazaki having the specific property of not adsorbing to a substance. Accordingly, the combination of the teachings of the Yukawa and Miyazaki references is basically illogical, unreasonable, and accordingly not obvious.

In addition, even if, for sake of argument, it is assumed that the Examiner's assertion that "... Miyazaki disclose the above property of their invention after the coating is formed on a substrate" is reasonable, this assertion does not support the position that the combination of the teachings of the Yukawa and Miyazaki references is obvious. This is because, if the copolymer (B) of the Miyazaki reference exhibits a property as asserted by the Examiner, the copolymer (B) does not adsorb to the metallic pigment of the Yukawa reference when the metallic pigment is coated with the copolymer (B), which results in failure in obtaining the structure of the metallic pigment as disclosed in the Yukawa reference. In addition, in this case, the product resulting from the combination of the Yukawa and Miyazaki references has a property completely different from that of the flake pigment of the present invention in which the copolymer is adsorbed to the base particle wherein the phosphate group in the copolymer molecule plays the

roll of adsorbing the copolymer to the flake particles through excellent adsorbability of the phosphate group.

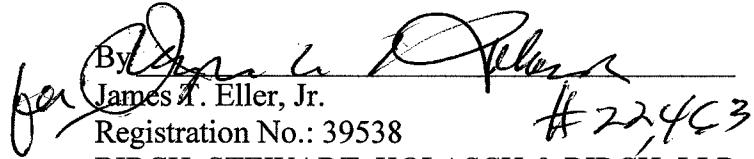
Incidentally, in the last line on page 3 of the Office Action letter, the Examiner uses the word “absorbed.” This would appear to be a typographical error inasmuch as the copolymer of the present application is involved with “adsorption” and not “absorption.”

Accordingly, in view of the above remarks reconsideration of the rejections and allowance of all of the claims of the present application are respectfully requested. In the event that the Request for Reconsideration does not place the present application into condition for allowance, entry thereof is respectfully requested as placing the present application into better condition for appeal.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch, Reg. No. 22,463, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Respectfully submitted,

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